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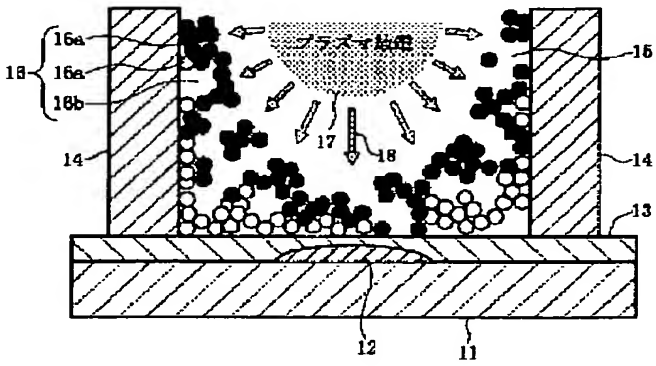
TITLE : PHOSPHOR FILM STRUCTURE, PASTE FOR FORMING PHOSPHOR FILM AND PLASMA DISPLAY PANEL USING PHOSPHOR FILM




ABSTRACT : PROBLEM TO BE SOLVED: To increase the luminance of a phosphor film and to reduce the manufacturing cost by forming the phosphor film with many phosphor grains and voids formed between the phosphor grains, and forming the voids in the phosphor film at the ratio of a specific range.

SOLUTION: Voids 16b are formed at the ratio of 40-80% in a phosphor film 16, desirably at the ratio of 50-70%, against 100% when the phosphor film 16 is completely filled with phosphor grains 16a without gaps. When the prescribed voltage is applied between display electrodes, a plasma discharge 17 occurs in a cell 15, and ultraviolet rays 18 generated by this plasma discharge 17 excite the phosphor grains 16a to generate visible light. The ultraviolet rays 18 are irradiated not only to the phosphor grains 16a on the surface of the phosphor film 16 but also to the phosphor grains 16a in the phosphor film 16, the phosphor grains 16a in the phosphor film 16 can also contribute to luminescence, the number of the luminescent phosphor grains 16a is increased as a result, and the high-luminance phosphor film 16 is obtained. The quantity of expensive phosphor powder to be used can be decreased.